

PRO[•]LINE^{USB} ultrasonic inspection device

Technical data



- Single- up to multiple channel usage ultrasound electronics
- Max. pulse repetition frequency 10 KHz
- Square wave pulse amplifier
- Encoder interfaces synchronized with A-scan
- 14 bit digitization
- Integrated flexible interfaces for digital input/outputs
- Data transfer via USB interface
- Low weight only approx. 2,5 kg

Technical Data

Pulser

Pulse repetition frequency per channel	1 up to 10.000 Hz
Pulse repetition frequency overall	max. 10.000 Hz
Pulse output	adjustable in 38 steps
Max. pulse amplitude	160 V/250 V
Pulse fall time	< 5 ns at 50 Ω
Single pulse width	20 – 500 ns
Pulse width resolution	10 ns
Pulse shape	square wave negative
Number of channels	PE: 1 - 8* TR / TT: 1 - 4*
Channel isolation (PE/TR)	> 65 dB @ 5 MHz
Channel triggering	internal and external

Receiver

Receiving amplifier	linear, broadband, voltage controlled
Calibrated gain	80 dB(hardware compensated)
Linearity	+/-1 dB
Input voltage	0,35 mV _{p-p} – 2 V _{p-p}
Frequency band width	0,2 - 25 MHz (-3 dB)
Input dynamics	100 dB (regulated)
Attenuation	none
Operation mode	PE, TR, TT
Filter	digital via software

Calibration

Range	0,01 – 640 µsec 100 MSPS
	0,01 – 2560 µsec 25 MSPS
Delay	0,01 – 640 µsec 100 MSPS
	0,01 – 2560 µsec 25 MSPS
Resolution	10 ns
Waveform	full wave, positive, negative, RF

Gates

Hardware gates	4 (overlapping), master gates, triggered on event
Software gates	4 more
Delay and range	0,1 - 640 µsec 100 MSPS
Resolution	10 ns
Amplitude detection	positive, negative or absolut
Alarm threshold	positive or negative
Interface echo triggering	depends on threshold

Digitizing

A/D converter type	sampling converter
Digitizing depth	14 Bit
Sampling rate	100 MSPS

Hardware depth compensation

Dynamic range	0 – 80 dB
Supporting points per channel	up to 1024
Amplitude resolution	0,25 dB
Range	full reception range
DAC steps	30 ns
Step resolution	10 ns (first step)
Sampling rate	20 dB/30 ns

Interfaces

Customized I/O's	2 – 4 inputs* (0 – 24 V), 2 – 8 outputs* (Open-Collector)
Predefined I/O's	2 inputs (0 – 24 V), 1 output* (Open-Collector)
PC interface	USB 2.0
Connection for ultrasonic inspection probes	Lemo 00, socket
Speed of data acquisition	30 MByte/s (depending on channel)

HOST Computer (minimum requirements)

Port	USB 2.0
CPU	depends on application
RAM	depends on application
Hard disk	depends on application
Operating system	WIN XP/WIN 7, 32 Bit

General

Power supply unit	100 – 240 VAC/12 VDC
Power consumption	20 W (max.)
Operating temperature	5 °C up to 50 °C
Splash water protection	IP 65
Dimensions	w x h x l 189 x 58 x 195 mm (7,44 x 2,28 x 7,67")
Weight	approx. 2,5 kg

*Depends on model



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- accredited acc. to DIN EN ISO/IEC 17025:2005
- certified acc. to ISO 9001:2008/EN 9100:2009